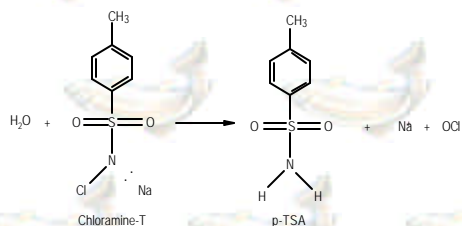


# Depletion of para-Toluenesulfonamide from the Edible Fillet Tissue of Rainbow Trout After Exposure to Chloramine-T

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## Introduction

Bacterial gill disease (BGD) is a predominant disease of fish cultured in crowded and stressful rearing conditions and is responsible for substantial production losses on federal, state, and commercial hatcheries. Chloramine-T (chl-T) is a disinfectant that is effective in treating BGD. Legal use of chl-T as a therapeutic drug in fish culture depends on approval by the Food and Drug Administration (FDA). Data required for an approval include determining depletion of the marker residue (para-toluenesulfonamide, p-TSA) from the edible fillet tissue of exposed fish. This study was designed to expose a representative salmonid species in water near the lower end of the temperature range for BGD. The treatment regimen used in this study represents the most aggressive treatment expected for the chl-T label.



The reduction of chl-T to p-TSA.

## Objective

Determine p-TSA concentrations in the skin-on fillet tissue of rainbow trout after treatment with chl-T at 20 mg/L for 60 min on four consecutive days in water at 8°C.

## Methods

Exposure system; peristaltic pump maintained 20 mg/L of chl-T in the exposure tank.



Exposed 127 rainbow trout; mean weight 457 g.



Fillets homogenized with dry ice and extracted with methylene chloride.



Chloramine-T concentrations verified with a Hach colorimetric method.



Right fillet taken from each fish.



p-TSA concentrations determined with a high performance liquid chromatography method.

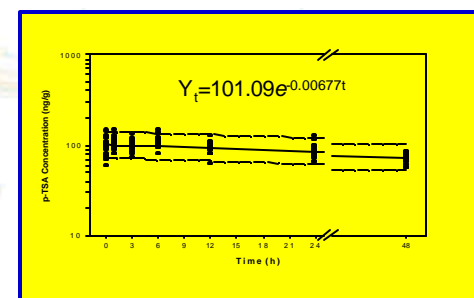


## Results

Concentration of p-TSA in fillet tissue.

Time after last treatment (h)	n	Mean p-TSA (ng/g)	RSD (%)
0	18	97.2	23
1	18	104	16
3	18	98.8	16
6	18	106	15
12	18	92.9	15
24	18	86.3	19
48	19	73.4	12

Depletion of p-TSA from fillet tissue. The solid line depicts the model that best fit the data points and the dashed lines depict 95% confidence bands for the model.



## Conclusions

The p-TSA concentrations in skin-on fillet tissue from rainbow trout were more than nine times less than the expected tolerance limit (1000 ng/g) after treatment with chl-T.